

App. No. 10/024,639
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Amendment to claims:

This listing of claims will replace all prior versions and listing of claims in the application:

Listing of claims:

1. (Currently amended) Apparatus for shaping a pole-tip assembly of a recording transducer with a focused particle beam, said apparatus comprising
 - a platform for receiving a multi-layer device including said recording transducer and for disposing said multi-layer device for interaction with said focused particle beam, said multi-layer device having
 - a first layer including a first structural element,
 - a second layer including a second structural element, and
 - a shielding layer including a shielding element, said shielding element located between said first structural element and said second structural element, said structural elements and said shielding element intersecting a geometrical surface that extends transversely to said first, second, and shielding layers, so that imaging at least a portion of said shielding element, at said geometrical surface, provides information that facilitates imaging said second structural element without imaging said first structural element,
 - means for scanning said focused particle beam over said geometrical surface at a selected section that includes at least a portion of said shielding element and that does not include said first structural element,
 - means for generating a first image signal of said portion of said shielding element responsive to interaction of said focused particle beam with said shielding element.
 - ~~means~~ a pattern recognition element programmed for analyzing the first image signal of

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said portion of said shielding element to determine the location of said portion of said shielding element;

means for directing, responsive to said determined location of said portion of said shielding element, said focused particle beam to interact with said second structural element without substantially interacting with said first structural element;

means for generating a second image signal responsive to interaction of said focused particle beam with said second structural element, and

a processor means programmed to be responsive to said second image signal for generating a milling signal representative of an instruction for applying said focused particle beam to a selected portion of said second structural element for milling said selected portion of said second structural element.

2. (Original) Apparatus according to claim 1 wherein said means for generating said second image signal further includes means for generating, responsive to said second image signal, a coordinate signal representative of an instruction for applying said focused particle beam to a selected portion of said second structural element for shaping said pole-tip assembly by milling said selected portion of said second structural element.

3. (Original) Apparatus according to claim 1 wherein said means for generating a first image signal and said means for generating a second image signal include a source of a focused particle beam.

4. (Original) Apparatus according to claim 1 wherein said means for generating a first image signal and said means for generating a second image signal include a camera element.

5. (Original) Apparatus according to claim 1 further including charge neutralization means for neutralizing a static electric charge on said recording transducer.

Claims 6-17 (Cancelled)

18. (Currently amended) Apparatus for shaping a pole-tip assembly of a recording transducer with a focused particle beam, said apparatus comprising

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a platform for receiving a multi-layer device including said recording transducer and for disposing said multi-layer device for interaction with said focused particle beam, said multi-layer device having

a first layer including a first structural element,

a second layer including a second structural element, and

a shielding layer including a shielding element, said shielding element located between said first structural element and said second structural element,

said structural elements and said shielding element intersecting a geometrical surface that extends transversely to said first, second, and shielding layers, so that imaging at least a portion of said shielding element, at said geometrical surface, provides information that facilitates imaging said second structural element without imaging said first structural element,

means for scanning said focused particle beam over said geometrical surface at a selected section that includes at least a portion of said shielding element and that does not include said first structural element,

means for generating a first image signal of said portion of said shielding element responsive to interaction of said focused particle beam with said shielding element, and for generating a second image signal responsive to interaction of said focused particle beam with said second structural element,

~~means a pattern recognition element programmed~~ for analyzing said first image signal of said portion of said shielding element to determine the location of said portion of said shielding element,

means for directing, responsive to said determined location of said portion of said shielding element, said focused particle beam to interact with said second structural element without substantially interacting with said first structural element, said interaction of said focused particle beam with said second structural element resulting in said second image signal, and

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processor means responsive to said second image signal for generating a milling signal representative of an instruction for applying said focused particle beam to a selected portion of said second structural element for milling said selected portion of said second structural element.